LITIGATION TECHNICAL SUPPORT AND SERVICES
ROCKY MOUNTAIN ARSENAL
DRAFT FINAL VOLUME I
INVENTORY REPORT
POLYCHLORINATED BIPHENYL (PCB)
INVENTORY

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Prepared for:

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ROCKY MOUNTAIN ARSENAL

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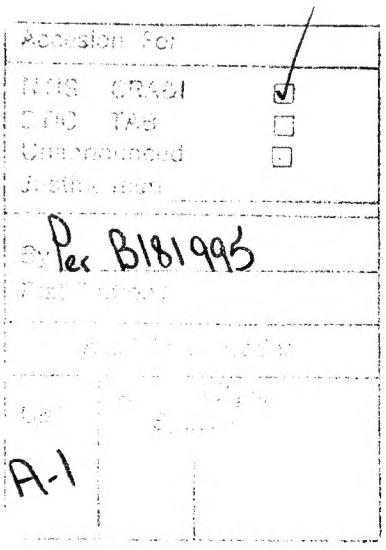

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EXECUTIVE SUMMARY

GROUP I BUILDINGS AND STRUCTURES

The 151 buildings and structures included in the polychlorinated biphenyl (PCB) inventory at the Rocky Mountain Arsenal (RMA) are divided into two groups. Group I (62) included buildings and structures are located predominantly in the Rail Classification Yard (Sections 3 and 4). However, some of the Group I buildings are located in the South Plants (Section 2) and the administration areas of Sections 2, 3, 4, 11, 34, and 35. Group II (89) buildings and structures are situated primarily in the South Plants (Sections 1, 2, 34, 36), but some are located in Sections 6 and 31. These buildings and structures were investigated under Task 3, PCB Inventory of RMA Buildings, in the spring of 1990. A total of 20 soil, liquid, and asphalt samples were collected. All samples from Group I buildings and structures were taken from Building 621B since this was the only building/structure showing both a history of past and present transformer storage, and evidence of possible PCB contamination. A total of 13 soil samples were collected to a depth of six inches; five asphalt samples were drilled to a depth of one inch; and two liquid samples were obtained.

PCBs were detected at concentrations below 50 parts per million (ppm) in all samples with the exception of two soil and asphalt samples obtained from Building 621B, Salvage Yard. Based on the results of this field investigation, additional field studies are not warranted because they are beyond the scope of this task.

1.0 PHYSICAL SETTING

1.1 Location

The majority (44) of Group I buildings and structures are located in Sections 3 and 4 of the Rocky Mountain Arsenal (RMA), Rail Classification Yard. Five of the buildings/structures in Group I can be found in Section 2, South Plants, with the remaining 13 buildings/structures located in administrative areas in Sections 4, 11, 34, and 35. Table 1-1 lists all buildings/structures in Group I, along with a brief description of the building/structure and section number.

1.2 History of Use and Background

Group I buildings and structures consist of the following:

- 21 administrative buildings located in Sections 2, 3, 4, 11, 34, and 35
- 20 warehouses (one salvage yard) and 8 maintenance buildings in Sections 3 and 4
- 7 chemical storage buildings in Section 4
- 4 utility buildings in Sections 3, 4, and 35
- 2 laboratories in Section 4.

Most of these buildings were constructed by the Army for their use from 1942 through 1974. However, Building 383, the Community Club, was built in Section 2 by the City of Denver. Buildings 633 and 633A, both laboratories in Section 4, were built by the Army but used by Julius Hyman and Company and Shell for a period of 10 years (1948-1958) (EBASCO, 1988). Building 633B, a warehouse in Section 4, was built by Julius Hyman and Company and was initially used by Hyman and Shell Chemical Corporation followed with usage by the Army.

TABLE 1-1

GROUP I BUILDINGS/STRUCTURES
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BUILDING #	STRUCTURE DESCRIPTION	TYPE	SECTION
111	RMA Administration Hqs., Offices	Administrative	35
112	Communication Headquarters	Administrative	35
112A	Emergency Generating Plant	Utility	35
T131	NCO Family Quarters	Administrative	35
T134	Family Housing	Administrative	35
T135	Security Office	Maintenance	35
T143	West Gate Guardhouse	Administrative	04
T145	South Gate Guardhouse	Administrative	11
T159	Men's Barracks	Administrative	34
T163	Bowling Alley	Administrative	34
T165	Troop Supply Building	Administrative	34
T166	Vault Storage Building	Administrative	34
T167	Hobby Shop/Recreation	Administrative	34
368	Swimming Pool/Filter House	Administrative	02
T373	Officer's Quarters	Administrative	02
T373B	Garage to Building 373	Administrative	02
383	Community Club	Administrative	02
T383A	Officer's Club-Storage	Administrative	02
611	Data Processing Building	Administrative	04
612	Courier Building	Administrative	04
613	Management Information Systems	Administrative	04
T614	Warehouse	Warehouse	03

TABLE 1-1. GROUP I BUILDINGS/STRUCTURES (Page 2 of 3).

BUILDING #	STRUCTURE DESCRIPTION	TYPE	SECTION
T615	NOAA Warehouse	Warehouse	03
T616	Warehouse	Warehouse	03
T617	Warehouse	Warehouse	03
618	Offices/Warehouse	Warehouse	03
619	Warehouse	Warehouse	03
621	Property Disposal/Salvage	Warehouse	04
621A	Truck Scale Platform	Maintenance	04
621B	Open Storage Yard	Warehouse	04
622	Paint Shop/General Storage	Warehouse	04
T623	Carpentry/Hobby/Auto Shop	Maintenance	04
T624	Repair/Salvage/Surplus Facility	Warehouse	04
T625	Warehouse	Warehouse	04
T627	Vehicle Maintenance Shop	Maintenance	04
T627B	Flammable Material Storehouse	Warehouse	04
628A	Diesel/Waste Oil Storage Tank	Chemical Storage	04
629	Service Station	Maintenance	04
629A	Diesel Oil/Gas Storage Tank	Chemical Storage	04
629B	Diesel Oil/Gas Storage Tank	Chemical Storage	04
629C	Diesel Oil/Gas Storage Tank	Chemical Storage	04
629D	Diesel Oil Storage Tank	Chemical Storage	04
629E	Service Station Shelter	Maintenance	04
630	Gas Meter House	Utility	03
T631	Railcar Maintenance Roadhouse	Maintenance	04

TABLE 1-1. GROUP I BUILDINGS/STRUCTURES (Page 3 of 3).

BUILDING #	STRUCTURE DESCRIPTION	TYPE	SECTION
T631A	Flammable Material Storehouse	Warehouse	04
632	Gas Fired Heating Plant	Utility	04
633	Cafeteria/Bug Lab/Theatre	Laboratory	04
633A	Laboratory/Storehouse	Laboratory	04
633B	Hazardous Material Storage	Warehouse	04
634	Flammable Material Storehouse	Warehouse	04
635	Admin. Offices/Rocky Mt. Railcar	Administrative	03
T639	Lumber Storage	Warehouse	04
643	Flammable Materials Storehouse	Warehouse	04
T647A	Motor Pool Dispatch Office	Administrative	04
T647B	Motor Pool Vehicle Storage	Warehouse	04
T647C	Motor Pool Vehicle Storage	Warehouse	04
T647D	Motor Pool Vehicle Storage	Warehouse	04
648	Road Oil Pump/Boiler House	Utility	04
648A	Road Oil Tank	Chemical Storage	04
648B	Road Oil Tank	Chemical Storage	04
673	Railcar Scale House	Maintenance	03

NCO Non-commissioned Officer

NOAA National Oceanic and Atmospheric Administration

2.0 BUILDINGS, STRUCTURES INVESTIGATION

2.1 Methods

2.1.1 Sampling Methods

Using the methodology presented in the Task 3 Work Plan (EBASCO, 1990), samples of soil, concrete (asphalt), or dielectric fluid were to be obtained from suspect equipment (both electrical and non-electrical), stained soil, or concrete within, atop, on, or immediately adjacent to the suspect buildings and structures. Twenty samples were taken from Group I buildings/structures.

In implementing this program, a presampling survey was conducted prior to the sampling operation to identify prospective sampling sites. Each building or structure was examined for possible polychlorinated biphenyls (PCBs) contamination in the form of suspect equipment, and stained soil, asphalt, and concrete in the vicinity of any suspect equipment. Transformers, single-phase motors, capacitors, pushbutton stations and fluorescent light fixtures were among the equipment inspected for the presence of a liquid reservoir. If this reservoir was located within the piece of equipment, and was accessible, the equipment would be tagged for sampling. Stained soil, asphalt, or concrete near any suspect equipment was similarly marked for sampling.

Samples were not collected at each building/structure included in the Group I PCB Inventory. During the Group I presampling survey, only one structure, Building 621B, Salvage Yard, bore evidence of potential PCB contamination. Conversation with the manager of the 621B Salvage Yard indicated a history of transformer storage in Bin 12, and on the southwest corner of the asphalt pad (Lambdin, 1990). Stained soil, asphalt and a can of suspect gear oil were also found in these areas. Twenty soil, asphalt, and liquid samples were obtained from the Salvage Yard, as follows:

Sample No.	Description (Building 621B)
1	Soil - Bin 12
3	Soil - Bin 12
4	Soil - Bin 12
5	Soil - Bin 12
6	Soil - Bin 12
7	Soil - Bin 12
8	Soil - Bin 12
9	Liquid - Gear Oil - Bin 12
10	Soil - Adjacent to Southwest (SW) Corner of Asphalt
10D	Soil - Duplicate - Adjacent to SW Corner of Asphalt
11	Soil - Adjacent to SW Corner of Asphalt
12	Soil - Adjacent to SW Corner of Asphalt
13	Soil - Adjacent to SW Corner of Asphalt
13R	Water - Rinse Blank - SW Corner of Salvage Yard
14	Asphalt - SW Corner of Salvage Yard
15	Asphalt - SW Corner of Salvage Yard
16	Asphalt - SW Corner of Salvage Yard
17	Asphalt - SW Corner of Salvage Yard
18	Asphalt - SW Corner of Salvage Yard

All soil sampling was completed to a depth of six inches with a stainless steel scoop that was decontaminated (washed with a low phosphate detergent or steam-cleaned) between samples. A core drill with a 1-1/2 inch carbide bit (dry) was used to obtain asphalt samples to a depth and diameter of 1 inch. The carbide bit was decontaminated between samples. Liquid samples from equipment and suspect cans of oil were collected using a dedicated glass thief.

All soil and asphalt sample locations were located by survey following completion of sampling.

2.1.2 Analytical Methods

All samples were analyzed by Environmental Protection Agency (EPA) Methods 600 (Polychlorinated Biphenyls in Transformer Fluid and Waste Oils), 608(40 CFR 136 - Organochlorine Pesticides and PCBs) and 8080 (SW846 - Organochlorine Pesticides and PCBs). United States Army Toxic Hazardous Materials Agency (USATHAMA) procedures were not used because there are no certified

methodologies available to analyze the type of matrices sampled (waste oils, concrete and asphalt). In addition, PCB mixtures are difficult to resolve. As a result, USATHAMA procedures were not employed for the PCB inventory. EPA Methods 600, 608, and 8080 have the ability to detect the following:

- PCB-1016
- PCB-1221
- PCB-1232
- PCB-1242
- PCB-1248
- PCB-1254
- PCB-1260

The method of analysis was dependent upon the sample matrix. Each matrix required slight modifications of EPA Methods 600, 608, and 8080, which determine PCBs by a gas chromatography/electron capture detector (GC/ECD) method. Modifications of some of the QC methods, through use of reference materials, were necessary because the sample matrices (concrete and asphalt) are very complex. Also, the National Institute of Standards and Technology does not provide a clean standard to use during analysis. The environmental matrices for the EPA Method 600 (The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils), 608, and 8080 are listed below:

Matrix	Primary Method Designation (GC/ECD)
Nonimpervious Solids (concrete, asphalt)	8080
Soils	8080
Waste Oil (dielectric fluid)	600/608

Prior to the use of these methods, modifications including sample extraction techniques were necessary. Soxhlet or sonication extractions (high frequency probe that loosens any compounds adhering to

particles) were employed for all matrices; an aliquot of each sample was spiked with surrogates, extracted, and compared with the original analysis to determine the spike recovery values for that particular sample. Another modification is the collection of field duplicates and rinse blanks to validate the precision of the sampling/analytical process, and to ensure that the entire analytical system was interference free.

Ebasco Services Incorporated (EBASCO's) review of the PCB data performed by Vista Laboratories was found to be within acceptable criteria. Vista Laboratories followed appropriate quality control (QC) requirements such as daily calibrations, proper number of blanks, and matrix spikes (MS) and matrix spike duplicates (MSD). The MS (an actual sample where an aliquot is taken and a known amount of a particular set of target analytes, in this case, Aroclor 1254, is added) and a MSD (a duplicate of an MS) were compared and the recoveries were within two percent, as well as within the acceptable relative percent difference (RPD). Although no RPD limits have been established for the PCB compounds analyzed, the average RPD of 3.6 is acceptable. This acceptance is based upon the average RPD of pesticides, which is 45.

The percent recoveries of the samples analyzed were all within acceptable QC criteria. The duplicates were compared to the regular samples and found to be within determined ranges. EPA procedures and the appropriate QC requirements were performed on all samples for the PCB inventory. As noted above, the QC results were within acceptable criteria. The data for the PCB inventory appeared to meet all QC requirements and was acceptable. A summary of the results of these analyses is presented in Table 2-1, Section 2.3, of this report.

2.2 Field Observations

A wide array of equipment was found in Group I buildings. Several air conditioning units were found, along with some furnaces, boilers, generators, dishwashers, heaters, a gas/oil burner, and two battery chargers. Of more significance, different types of motors were observed in 20 of the Group I buildings. This included motors for sump pumps, water pumps, paper drills, lathes, fans, blowers, compressors, heaters, and furnaces. Ten transformers were located and examined in the Group I buildings, with the exception of the north end of Building 621B, Salvage Yard, where many stored transformers of different vintages were seen to be stacked upon each other. Bin 12, an empty, dirt-surface storage lot in the northeast corner of the Salvage Yard, was confirmed to have held stored transformers in the past. Four stained soil areas in the southeast corner of Bin 12 were observed, along with a can of leaking gear lube oil in the northeast corner of the bin. Stained soil was also observed immediately adjacent to the asphalt just outside the far southwest corner of the Salvage Yard. The staining in this soil appeared to be a result of liquid runoff from leaking equipment stored on the asphalt pad directly north of this small strip of soil. Stained asphalt was also seen on the above-mentioned southwest portion of the asphalt pad where transformers were previously stored.

Other pieces of equipment observed in Group I buildings/structures included fluorescent light fixtures and ballasts, circuit breaker boxes, capacitors, fluid power gas valve, remote-control switch, de-ion line starter, drill press, magnetic switch, pushbutton station, power systems, and panelboards.

In situ air monitoring for organic vapors was conducted during the presampling survey and all sampling events for safety purposes using a photoionization detector (HNU), an organic vapor analyzer (OVA), and a combustible gas indicator (CGI). Two OVA readings were recorded somewhat above background level in Buildings 211 and 328 but they were not considered to be significant. The HNU and MSA readings were not above background levels.

2.3 Analytical Results

Concentrations of PCBs ranged from below reporting limit (BRL) to 160 parts per million (ppm) in Group I buildings/structures. The site identification number, sample tag number, description of sample location, and PCB concentration are listed in Table 2-1. PCBs were found to be below the reporting limit in four of the 20 Group I samples. The remaining 16 soil and asphalt samples contained PCB concentrations ranging from 1.2 to 160 ppm. Two of these samples contained PCB concentrations greater than 50 ppm, an established standard for storage and disposal of PCBs promulgated by Title 40, Code of Federal Regulations, Part 761, Subpart 60 (40 CFR 761.60). A PCB concentration of 160 ppm was found in Sample (PCB)04621B11, a soil sample obtained from a thin strip of soil located immediately south of the southwest corner of the asphalt pad that comprises the west half of Building 621B, Salvage Yard (Figure 2-1). PCBs were detected at a concentration of 54 ppm in Sample (PCB)04621B18, an asphalt sample obtained from the southwest corner of the above-mentioned asphalt pad. The remaining four soil samples from the soil strip south of the southwest corner of the asphalt pad (vicinity of Sample (PCB)04621B11) contained concentrations of PCBs ranging from 6.8 to 26 ppm. The two remaining asphalt samples with PCB concentrations above the reporting limit from the southwest corner of the asphalt pad (vicinity of Sample (PCB)04621B18) contained PCB concentrations of 2.3 and 2.5 ppm. Eight soil samples were taken from Bin 12, a small storage partition in the northeast corner of Building 621B, Salvage Yard, and they ranged in concentration from 1.2 to 27 ppm of PCBs.

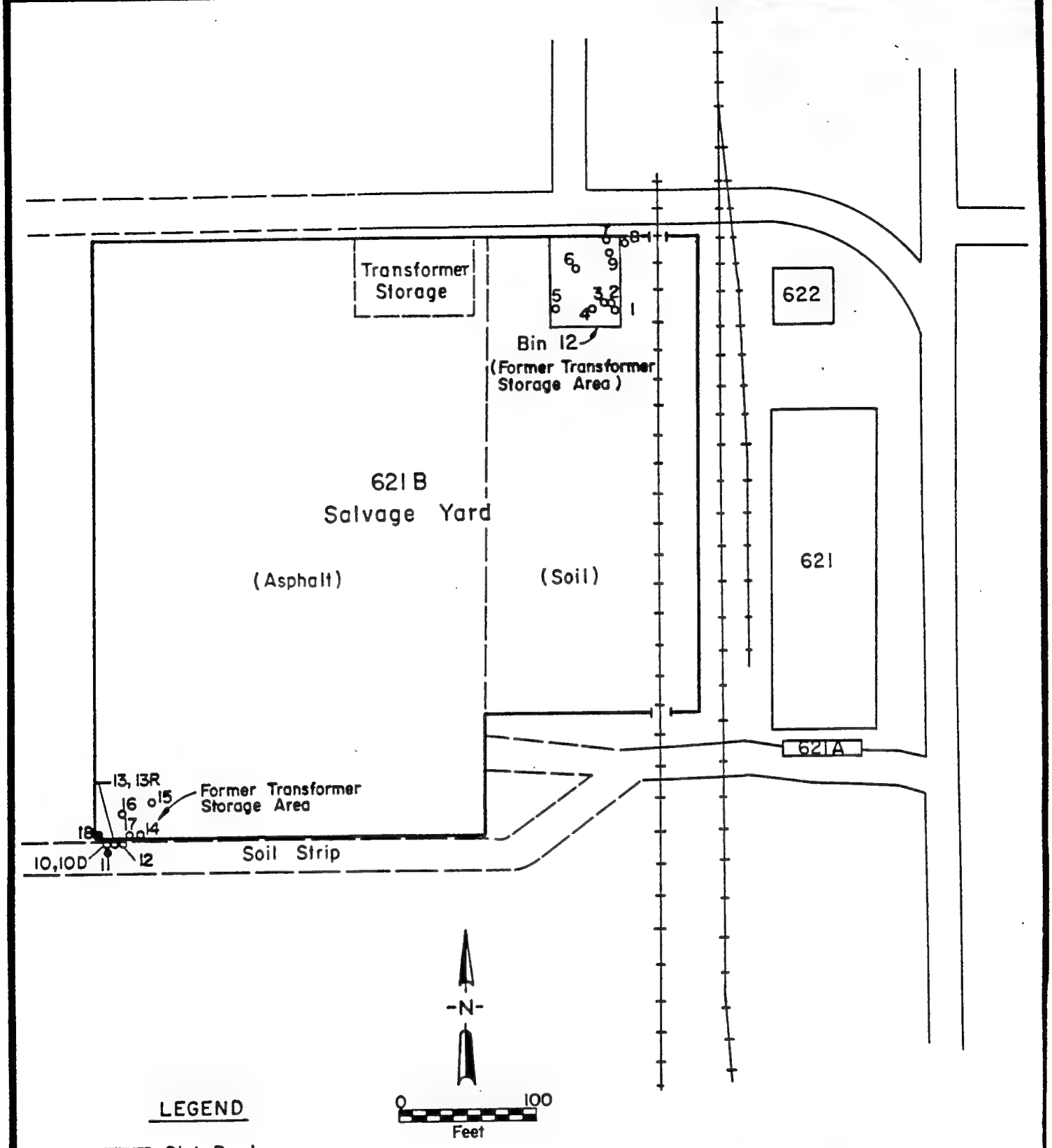
2.4 Contamination Assessment

Soil, liquid, and asphalt samples from Group I buildings and structures (Building 621B, Salvage Yard) contained PCB concentrations ranging from BRL to 160 ppm. Three distinct locations within 621B, Salvage Yard were sampled due to stained soil or asphalt, and their history of transformer storage. Bin 12, a 50 by 59 foot storage bin with a dirt surface, is located in the northeast corner of the salvage

TABLE 2-1
PCB SAMPLE RESULTS FOR SOIL, ASPHALT, AND LIQUID - GROUP I (BUILDING 621B, SALVAGE YARD)

	ID #	SAMPLE TAG #	DESCRIPTION	PCB CONCENTRATION (ppm)
	(PCB)04621B1	P0009	SOIL-Bin 12	8.2
	(PCB)04621B2	P0010	SOIL-Bin 12	4.7
	(PCB)04621B3	P0011	SOIL-Bin 12	8.0
	(PCB)04621B4	P0012	SOIL-Bin 12	27.0
	(PCB)04621B5	P0013	SOIL-Bin 12	5.6
	(PCB)04621B6	P0014	SOIL-Bin 12	2.2
	(PCB)04621B7	P0015	SOIL-Bin 12	1.2
	(PCB)04621B8	P0016	SOIL-Bin 12	1.3
	(PCB)04621B9	P0017	LIQUID-Gear Oil-Bin 12	BRL
	(PCB)04621B10	P0018	SOIL-South of SW Corner of Asphalt	13.0
	(PCB)04621B10-D	P0019	SOIL-South of SW Corner of Asphalt	26.0
*	(PCB)04621B11	P0020	SOIL-South of SW Corner of Asphalt	160.0
	(PCB)04621B12	P0021	SOIL-South of SW Corner of Asphalt	6.8
	(PCB)04621B13	P0022	SOIL-South of SW Corner of Asphalt	11.0
	(PCB)04621B13-R	P0023	WATER-Rinse-SW Corner-621B	BRL
	(PCB)04621B14	P0028	ASPHALT-SW Corner-621B	2.3
	(PCB)04621B15	P0029	ASPHALT-SW Corner-621B	BRL
	(PCB)04621B16	P0030	ASPHALT-SW Corner-621B	2.5
	(PCB)04621B17	P0031	ASPHALT-SW Corner-621B	BRL
*	(PCB)04621B18	P0032	ASPHALT-SW Corner-621B	54.0

* PCB concentration is greater than 50 ppm
ID Identification Number
BRL Below Reporting Limit
R Rinse Blank
D Duplicate
ppm parts per million



Prepared for:
Program Manager's Office
Rocky Mountain Arsenal
Aberdeen Proving Ground, Maryland

FIGURE 2-1

PCB Sample Locations
621 B, Salvage Yard
Rocky Mountain Arsenal
Prepared by: Ebasco Services Incorporated

yard. The soil in the southeast corner of this bin is moderately stained. Eight 0 to 6 inch soil samples and one liquid sample of gear oil from a leaking container were taken from this area. A thin strip of stained soil lying immediately south of the southwest corner of the asphalt pad (edge of an old dirt road) was the second location sampled. Five soil samples at depths of 0 to 6 inches were obtained from this location, plus a rinse blank sample of the sampling equipment decon water (water used for decontamination of equipment). The third location sampled is the southwest corner of the asphalt pad where five distinct stained areas on the asphalt surface are visible.

PCBs were found above 50 ppm in the 0 to 6 inch interval of one soil sample from the soil strip south of the asphalt pad, and the 0 to 1 inch interval of one asphalt sample from the southwest corner. Both samples were obtained from the above mentioned former transformer storage locations within the 621B Salvage Yard.

As evidenced from the staining, a thin strip of soil (at one time, the northern edge of an old dirt road) lying immediately south of the southwest corner of the asphalt pad is believed to have served as a drainage receptor for any dielectric fluid or liquids leaking from the transformers previously stored on this portion of the asphalt pad. A concentration of 160 ppm in the 0 to 6 inch interval of Soil Sample (PCB)04621B2, and concentrations ranging from 6.8 to 26 ppm in adjacent soil samples (0 to 6 inch interval) from the immediate area further confirmed the release of PCB-bearing dielectric fluid into this portion of soil south of the asphalt pad.

The 0 to 1 inch asphalt sample from the southwest corner of the asphalt pad with a PCB concentration of 54 ppm, along with two other asphalt samples from the immediate area with concentrations of 2.3 and 2.5 ppm, support the possible release of PCB-bearing dielectric fluid from previously stored transformers onto the asphalt at this location.

The relatively low PCB concentrations (1.2 to 27 ppm) detected in soil samples from Bin 12 that accompany the minor staining observed in this soil also confirmed the release of PCB-bearing dielectric fluid from previously stored transformers into the soil of Bin 12; however, concentrations in this area were found to be below the 50 ppm storage and disposal standard. There will be no labelling or marking of equipment in accordance with 40 CFR 761 because equipment containing PCBs in concentrations of 50 ppm to 500 ppm was not found in the Group I buildings.

3.0 CONCLUSIONS AND RECOMMENDATIONS

As discussed previously, the soil and asphalt in selected areas of 621B, Salvage Yard is contaminated with concentration of PCBs greater than 50 ppm as a result of transformer storage either in the sample location or immediately adjacent to it. According to 40 CFR 761.60, spills of dielectric or PCB-bearing fluid and other uncontrolled discharges of PCBs at concentrations of 50 ppm or greater constitute the need for disposal of PCBs. Any non liquid PCBs at concentrations of 50 ppm or greater in the form of soil, concrete, asphalt, or other debris should be disposed of:

1) In an incinerator which complies with 40 CFR 761.70; or

2) In a chemical waste landfill which complies with 40 CFR 761.75.

According to 40 CFR 761.60, capacitors that contain between 50 and 500 ppm PCBs shall be disposed of in an incinerator that complies with 761.70 or in a chemical waste landfill that complies with 761.75. Any PCB article stored for disposal before January 1, 1983, shall be removed from storage and disposed of as required by this part before January 1, 1984. Any PCB Article stored for disposal after January 1, 1983, shall be removed from storage and disposed of as required by Subpart D of this part within one year from the date when it was first placed into storage.

All equipment in Group I buildings/structures with a potential for containing PCB-bearing liquid was examined. Dates of manufacture, the manufacturer, type of motor, model and serial number were recorded. Manufacturers were then contacted when possible.

In most cases, the type of motor could be determined by examining the motor labelling or contacting the manufacturer. Split-phase and three-phase motors do not contain capacitors, and if they are not liquid cooled, it can be assumed they do not contain any PCB-bearing dielectric fluid. However,

single-phase motors may contain capacitors, and if manufactured prior to 1979, they could contain PCB-bearing dielectric fluid.

Of the 55 motors observed in Group I buildings/structures, approximately half were determined to be single-phase, with the balance being three-phase or split-phase as shown in Table 3-1. As stated previously, the single phase motors may contain capacitors. In most situations, the year of manufacture could not be determined because:

- the face plate was illegible due to rust or corrosion,
- the motor was so old that the manufacturer does not have record of such a motor,
- the manufacturer no longer exists.

EBASCO was advised by most manufacturers that any attempt to open the capacitor and sample the liquid would destroy the motor case and therefore, the motor. Table 3-1 is a list of the Group I buildings/structures that contain single-phase motors.

It could not be determined conclusively whether the electric motors contained capacitors or whether the capacitors are of the wet or dry type. This was because damage to the motor would occur upon accessing the capacitor in order to sample and analyze the dielectric fluid for PCBs. As a result, recommendations are as follows:

- Electric motors which are inoperable and/or unrepairable and scheduled for disposal as scrap metal should be disassembled and inspected for a capacitor. If dry-type capacitors are found, they will not contain PCBs and may be disposed of with no restrictions. If wet-type capacitors are found, they should be placed in secure storage until a

TABLE 3-1

GROUP I BUILDINGS/STRUCTURES CONTAINING SINGLE-PHASE MOTORS

Building No.	Single Phase Motor	Manufacturer
111	Electric Motor	Century
	Pump Motor	General Electric
	Compressor Motor	Peerless Electric Co.
	Fan Motor	Trane Co.
611	Pump Motor	Emerson Motor Division
	Electric Motor	General Electric
	Pump Motor	General Electric
	Motor	Westinghouse
612	Motor	Marathon Electric
	Heater w/Fan Motor	Trane Co.
613	Motor-Capacitor Start	Dayton Electric Manuf. Co.
	Electric Motor	Emerson Motor Division
618	Pump Motor	Marathon Electric
619	Pump Motor	General Electric
	Pump Motor	Marathon Electric
	Pump Motor	Marathon Electric
623	AC Motor (Dual Volt. Capacitor)	General Electric
624	Motor-Grinder	Brown-Brockmeyer Co.
627	Compressor Motor	Dayton Electric Manuf. Co.
	Pump Motor	Dayton Electric Manuf. Co.
	AC Motor (Split Phase)	Dayton Electric Manuf. Co.
	Drill Press-Motor	Rockwell Delta
	Lathe-Motor	General Electric
	Motor	General Electric
	Motor	Reliance Electric Corp.
629	Magnetic Switch-Motor	General Electric
631	Pump Motor	General Electric
633B	Sump Pump Motor	The Hoover Co.

sufficient quantity are accumulated for disposal, or until the one year storage time limit is reached, and disposed in accordance with 40 CFR 761.60.

- Electric motors which are operable or repairable and are scheduled for resale and reuse should be disassembled and inspected as described above, or sold with a disclaimer concerning their PCB suspect status.

A similar approach is recommended for fluorescent light ballasts. Several buildings were noted as containing fluorescent lighting systems. There was no evidence of leaking ballasts, and no lighting fixtures were disassembled to determine if they contained wet-type ballasts. A drum containing used ballasts was found in Building 751. EBASCO was advised that most ballasts are potted in an asphalt compound; the ballast would thus have to be destroyed in order to sample the liquid inside. It is recommended that the practice of removing lighting ballasts from buildings scheduled for demolition be continued to prevent unintentional, improper disposal of possible PCB articles.

A total of 9 transformers were observed inside Group I buildings and structures, and an additional transformer was found on the outside east wall of Building 648. All transformers were accessible which permitted confirmation that they are all dry transformers (no reservoir containing PCB-bearing dielectric fluid).

According to 40 CFR 761.30, as of October 1, 1985, the installation of PCB transformers (wet transformers which have been placed into storage for reuse or which have been removed from another location) in or near commercial buildings is prohibited. This further substantiates the finding of exclusively dry type transformers in Group I buildings and structures.

REFERENCES

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EBASCO (Ebasco Services, Incorporated). 1990, March. Final Work Plan - Polychlorinated Biphenyl (PCB) Inventory. Volume I, Task No. 3. Contract No. DAAA05-89-C-0002. Prepared for Program Manager's Office for Rocky Mountain Arsenal Contamination Cleanup.

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APPENDIX A

Equipment Observed in Group I Buildings/Structures

APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	Allis-Chalmers						
DN	631	Motors (2)	N54610-8-	511D-N54610-80 511D-N54610-185		ARX	3-Phase
DN	648	Transformer (dry)		1822849		AD	Single Phase
	Automatic Switch Co.						
DN	613	Remote Control Switch		433085	926P		
	Baldor Electric Co. Ft. Smith, AR.						
WN	624	Motor (no PCB)	20B2M				
	Baldor Industrial Motor						
WN	632	Motor (no PCB)				VM3211T	3-Phase
	Benjamin Electric Mfg. Co.						
DN	167	Fluorescent Light Fixtures					
	Berg-Gibson Mfg. Co., Kansas City, MO						
I-1	618	Truck Batt. Charger	PR 1240	L6-3368		capacitor: 40-1-2	Part #: 20-2-2
	Bogue Precision Electrical Equipment						
DN	627	Battery Charger		8200-125			2 Dry Transf.Inside

WP Wet - PCB Positive

DN Dry - PCB Negative

I-1 Indeterminate - Equipment Interior Inaccessible - Potential PCBs

I-2 Indeterminate - Manufacturer Has No Record Of Equipment

I-3 Indeterminate - Manufacturer No Longer Exists

APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	Brown-Brockmeyer Co., Inc., Dayton, OH						
I-1	624	Grinder	G184-3 7583TR (Part #)		4F09(603)-31506(order #)		Single Phase
	Carrier Air Conditioner Co., Syracuse, NY						
DN	611	Air Conditioner	50BB016520	5409047			3-Phase
	Carrier Air Conditioner Co., Syracuse, NY						
DN	111	Air Conditioner	48DF-044	Y982385			Series: 540PA
DN	111	Air Conditioner	48DF-044	X981854			Series: 540PA
	Century						
I-1	131	Sump Pump Motor	Part #: 7-124937-20			SPS	Frame #: G48K
I-1	111	Electric Motor	SP-G2L-FHEG-3F	ANG			Single Phase
	Challenge Machinery Co., Grand Haven, MI.						
DN	111	Paper Drill-Motor	Century 1	39383			RMA #: S2920 Split Phase
	Chicago Transformer Division. Essex Wire Corp.						
DN	159	Transformer (dry)	NCF-2450				
	Dayton Electric Manuf. Co.						
I-2	627	Compressor Motor	9K453C				Single Phase
I-2	627	Pump Motor	5K1177				Single Phase

WP Wet - PCB Positive

DN Dry - PCB Negative

I-1 Indeterminate - Equipment Interior Inaccessible - Potential PCBs

I-2 Indeterminate - Manufacturer Has No Record Of Equipment

I-3 Indeterminate - Manufacturer No Longer Exists

APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
Dayton Electric Manuf. Co.(continued)							
DN	627	Split Phase AC Motor	5K416C				Single Phase (no PCB)
DN	632	Motor-Sump Pump	3N345B				3-Phase
I-2	613	Motor	6K122E				Capacitor Start Motor
	Day-Brite Lighting, Inc.						
I-1	163	Fluorescent Light Fixtures					
	Economics Laboratory Inc.						
I-1	383	Dishwasher/capacitors	B26	LR12375	PR1-115/230 V		SEC-22V, 30VA
	Emerson Motor Div., St. Louis, MO.						
I-1	611	Pump Motor	CA55CXDCF-1962				Single Phase
I-2	627	Heater Motor	B		UB23		
I-2	612	Motor			77869-1		
I-1	613	Electric Motor	CA55CXDCF-1962				Single Phase
	Frank Adam Electric Co.						
DN	166	Panelboard					
	General Electric						
I-2	134	Sump Pump Motor	N.P. 251354				
I-1	618	Fluorescent Lights			502X46		

WP Wet - PCB Positive

DN Dry - PCB Negative

I-1 Indeterminate - Equipment Interior Inaccessible - Potential PCBs

I-2 Indeterminate - Manufacturer Has No Record Of Equipment

I-3 Indeterminate - Manufacturer No Longer Exists

APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
General Electric (continued)							
I-1	623	A.C. Motor	5KC67881270			KC	Single Phase Dual Volt.Capacitor
I-2	648	Motor-Pump Unit	99E16GL				
I-1	627	Motor-Lathe	5XBF00BD				Single Phase
I-2	627	Motor	5KG324D3				
I-1	627	Motor	5KH35KG113	SPA			Single Phase
DN	627	Motor	5K224D530				3-Phase
I-1	629	Magnetic Switch			4389098G104		Single Phase
DN	629	Induction Motor	5K254B105				3-Phase
I-1	611	Electric Motor	5KC47NG865A7				Single Phase
I-1	611	Pump Motor	5KH39NG 423				Single Phase
DN	112	Transformer (dry)	9T51B108				Single Phase
I-1	619	Fluor.Light Ballast			8G1141		Class: P
I-1	111	Pump Motor	5KC38FNG1T				Single Phase
I-1	631	Pump Motor	5KC45PG1FX				Single Phase
I-1	619	Pump Motor	5KC45RG1183				Single Phase
	Hevi-Duty Elec.(Sola Basic Ind)						
DN	632	Gas/Oil Burner	DLG 145-S	M8187			
	Honeywell						
DN	368	Fluid Power Gas Valve				V4055A10643	

WP Wet - PCB Positive

DN Dry - PCB Negative

I-1 Indeterminate - Equipment Interior Inaccessible - Potential PCBs

I-2 Indeterminate - Manufacturer Has No Record Of Equipment

I-3 Indeterminate - Manufacturer No Longer Exists

APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	The Hoover Co., N. Canton, OH						
I-1	633B	Sump Pump Motor	5989JH01367				Single Phase
	International Sales Co., San Francisco, CA						
I-1	618	Furnace w/elec.mtr.	120-F9A	151			
I-1	618	Furnace	210F9A	351			
I-2	647A	Atlas-AC Unit (air cond)	85F9A	952			
	ITT General Controls						
I-2	632	Motor	H01A232A01	7815A			
	Kingston-Conley, Inc.						
I-1	111	Blower Motor	38P153013	UD3-3654			
	Lennox Industries, Inc.						
DN	111	Furnace/AC Unit	GCS9-651-120A-3P				
DN	111	Furnace/AC Unit	GCS9-411-120-1P	5480D 03833			
	Liebert Corp.						
DN	112A	Uninterrupt. Power System	AP-340	P12647SD		Site ID: 35650	Tag #: 1050800
DN	112A	Uninterrupt. Power System	AP-340	P-09932SD		Site ID: 35650	Tag #: 1050801

WP Wet - PCB Positive

DN Dry - PCB Negative

I-1 Indeterminate - Equipment Interior Inaccessible - Potential PCBs

I-2 Indeterminate - Manufacturer Has No Record Of Equipment

I-3 Indeterminate - Manufacturer No Longer Exists

APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	Lincoln Motor Electric Co., Cleveland, OH						
DN	627	Motor	383596		DG		3-Phase
	Louis Allis Co., Milwaukee, WI						
DN	629	Pump Motor-Diesel	605828			ES	3-Phase
DN	629	Pump Motor-Regular	605829			ES	3-Phase
	Marathon Electric						
I-1	612	Motor	VQD56C341006CBP				Part #: DM0005 Single Phase
DN	632	Main Motor	HA254TTDR76	21BAWF1			3-Phase
I-2	112	Water Pump Motor	PQD56C17D957B W				
I-1	618	Pump Motor	5UJ184CDR343EEWCW				Single Phase
I-1	619	Pump Motor	5UJ184CDR343EEWCW				Single Phase
I-1	619	Pump Motor	5UJ184CDR343EEWCW				Single Phase
	Minneapolis Honeywell Reg. Co., Minneapolis, MN.						
DN	111	Transformer (dry)				AT72A3CG2	
	Peerless Electric Co., Warren, OH						
I-2	368	Motor		359923			
DN	111	Gas Boiler	211-9-W-S-I	211-9143-0884			
DN	111	Compressor Motor		FB27897			Single Phase

WP Wet - PCB Positive

DN Dry - PCB Negative

I-1 Indeterminate - Equipment Interior Inaccessible - Potential PCBs

I-2 Indeterminate - Manufacturer Has No Record Of Equipment

I-3 Indeterminate - Manufacturer No Longer Exists

APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	Reliance Electric Corp						
I-1	627	Motor	707613-PB (ID #)				Single Phase
	Rockwell Delta						
I-1	627	Drill Press	83-510				Single Phase
	Square D						
DN	166	Breaker Box					
	Tecumseh Products Co.						
I-1	383	Capac.(mtr/cpsr conn.)	3628322	8576110C09			270-324MFD
	Trane, LaCrosse, WI.						
DN	111	Self-Contained Air Cond.	SC 51C	671-61C-04-16879			
I-1	111	Fan Motor	SCX51C (1960s)				Single Phase-Capacitor
I-1	612	Heater w/Fan Motor.	UHSA06058AAAC	083K03236 (1970s)		136-105-01	Single Phase
DN	613	Motor	RAS-73B	9F-74426			3-Phase
	Wadsworth Electric Mfg. Co.						
DN	159	Panelboards (2)			NRP3166		
	Wagner Electric						
I-3	135	Generator	GP-80	NGG48270			

WP Wet - PCB Positive

DN Dry - PCB Negative

I-1 Indeterminate - Equipment Interior Inaccessible - Potential PCBs

I-2 Indeterminate - Manufacturer Has No Record Of Equipment

I-3 Indeterminate - Manufacturer No Longer Exists

APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	Webster Electric						
I-2	632	Ignition Transformer				6128AO38V	
	Westinghouse						
DN	627	Transformers (3) (dry)		56K1062		AJRB	Style: 1484207B
				56K1069		AJRB	
				56615815		AJRB	
DN	624	Transformer (dry)	1199469 (Style)	3250851		TW	
DN	624	Transformer (dry)				W-1	
DN	624	De-Ion Line Starters (2)	1089747E				
DN	629	Push Button Station	107296OD			HD-E	Class #: 15-010
I-1	611	Motor		309P444-A			Single Phase

WP Wet - PCB Positive

DN Dry - PCB Negative

I-1 Indeterminate - Equipment Interior Inaccessible - Potential PCBs

I-2 Indeterminate - Manufacturer Has No Record Of Equipment

I-3 Indeterminate - Manufacturer No Longer Exists

LITIGATION TECHNICAL SUPPORT AND SERVICES
ROCKY MOUNTAIN ARSENAL
DRAFT FINAL VOLUME I
INVENTORY REPORT
POLYCHLORINATED BIPHENYL (PCB)
INVENTORY

Contract No. DAAA05-89-C-0002
September 1990

Prepared by:

EBASCO SERVICES INCORPORATED

Prepared for:

PROGRAM MANAGER FOR
ROCKY MOUNTAIN ARSENAL

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EXECUTIVE SUMMARY

GROUP I BUILDINGS AND STRUCTURES

The 151 buildings and structures included in the polychlorinated biphenyl (PCB) inventory at the Rocky Mountain Arsenal (RMA) are divided into two groups. Group I (62) included buildings and structures are located predominantly in the Rail Classification Yard (Sections 3 and 4). However, some of the Group I buildings are located in the South Plants (Section 2) and the administration areas of Sections 2, 3, 4, 11, 34, and 35. Group II (89) buildings and structures are situated primarily in the South Plants (Sections 1, 2, 34, 36), but some are located in Sections 6 and 31. These buildings and structures were investigated under Task 3, PCB Inventory of RMA Buildings, in the spring of 1990. A total of 20 soil, liquid, and asphalt samples were collected. All samples from Group I buildings and structures were taken from Building 621B since this was the only building/structure showing both a history of past and present transformer storage, and evidence of possible PCB contamination. A total of 13 soil samples were collected to a depth of six inches; five asphalt samples were drilled to a depth of one inch; and two liquid samples were obtained.

PCBs were detected at concentrations below 50 parts per million (ppm) in all samples with the exception of two soil and asphalt samples obtained from Building 621B, Salvage Yard. Based on the results of this field investigation, additional field studies are not warranted because they are beyond the scope of this task.

1.0 PHYSICAL SETTING

1.1 Location

The majority (44) of Group I buildings and structures are located in Sections 3 and 4 of the Rocky Mountain Arsenal (RMA), Rail Classification Yard. Five of the buildings/structures in Group I can be found in Section 2, South Plants, with the remaining 13 buildings/structures located in administrative areas in Sections 4, 11, 34, and 35. Table 1-1 lists all buildings/structures in Group I, along with a brief description of the building/structure and section number.

1.2 History of Use and Background

Group I buildings and structures consist of the following:

- 21 administrative buildings located in Sections 2, 3, 4, 11, 34, and 35
- 20 warehouses (one salvage yard) and 8 maintenance buildings in Sections 3 and 4
- 7 chemical storage buildings in Section 4
- 4 utility buildings in Sections 3, 4, and 35
- 2 laboratories in Section 4.

Most of these buildings were constructed by the Army for their use from 1942 through 1974. However, Building 383, the Community Club, was built in Section 2 by the City of Denver. Buildings 633 and 633A, both laboratories in Section 4, were built by the Army but used by Julius Hyman and Company and Shell for a period of 10 years (1948-1958) (EBASCO, 1988). Building 633B, a warehouse in Section 4, was built by Julius Hyman and Company and was initially used by Hyman and Shell Chemical Corporation followed with usage by the Army.

TABLE 1-1

GROUP I BUILDINGS/STRUCTURES
(Page 1 of 3)

BUILDING #	STRUCTURE DESCRIPTION	TYPE	SECTION
111	RMA Administration Hqs., Offices	Administrative	35
112	Communication Headquarters	Administrative	35
112A	Emergency Generating Plant	Utility	35
T131	NCO Family Quarters	Administrative	35
T134	Family Housing	Administrative	35
T135	Security Office	Maintenance	35
T143	West Gate Guardhouse	Administrative	04
T145	South Gate Guardhouse	Administrative	11
T159	Men's Barracks	Administrative	34
T163	Bowling Alley	Administrative	34
T165	Troop Supply Building	Administrative	34
T166	Vault Storage Building	Administrative	34
T167	Hobby Shop/Recreation	Administrative	34
368	Swimming Pool/Filter House	Administrative	02
T373	Officer's Quarters	Administrative	02
T373B	Garage to Building 373	Administrative	02
383	Community Club	Administrative	02
T383A	Officer's Club-Storage	Administrative	02
611	Data Processing Building	Administrative	04
612	Courier Building	Administrative	04
613	Management Information Systems	Administrative	04
T614	Warehouse	Warehouse	03

TABLE 1-1. GROUP I BUILDINGS/STRUCTURES (Page 2 of 3).

BUILDING #	STRUCTURE DESCRIPTION	TYPE	SECTION
T615	NOAA Warehouse	Warehouse	03
T616	Warehouse	Warehouse	03
T617	Warehouse	Warehouse	03
618	Offices/Warehouse	Warehouse	03
619	Warehouse	Warehouse	03
621	Property Disposal/Salvage	Warehouse	04
621A	Truck Scale Platform	Maintenance	04
621B	Open Storage Yard	Warehouse	04
622	Paint Shop/General Storage	Warehouse	04
T623	Carpentry/Hobby/Auto Shop	Maintenance	04
T624	Repair/Salvage/Surplus Facility	Warehouse	04
T625	Warehouse	Warehouse	04
T627	Vehicle Maintenance Shop	Maintenance	04
T627B	Flammable Material Storehouse	Warehouse	04
628A	Diesel/Waste Oil Storage Tank	Chemical Storage	04
629	Service Station	Maintenance	04
629A	Diesel Oil/Gas Storage Tank	Chemical Storage	04
629B	Diesel Oil/Gas Storage Tank	Chemical Storage	04
629C	Diesel Oil/Gas Storage Tank	Chemical Storage	04
629D	Diesel Oil Storage Tank	Chemical Storage	04
629E	Service Station Shelter	Maintenance	04
630	Gas Meter House	Utility	03
T631	Railcar Maintenance Roadhouse	Maintenance	04

TABLE 1-1. GROUP I BUILDINGS/STRUCTURES (Page 3 of 3).

BUILDING #	STRUCTURE DESCRIPTION	TYPE	SECTION
T631A	Flammable Material Storehouse	Warehouse	04
632	Gas Fired Heating Plant	Utility	04
633	Cafeteria/Bug Lab/Theatre	Laboratory	04
633A	Laboratory/Storehouse	Laboratory	04
633B	Hazardous Material Storage	Warehouse	04
634	Flammable Material Storehouse	Warehouse	04
635	Admin. Offices/Rocky Mt. Railcar	Administrative	03
T639	Lumber Storage	Warehouse	04
643	Flammable Materials Storehouse	Warehouse	04
T647A	Motor Pool Dispatch Office	Administrative	04
T647B	Motor Pool Vehicle Storage	Warehouse	04
T647C	Motor Pool Vehicle Storage	Warehouse	04
T647D	Motor Pool Vehicle Storage	Warehouse	04
648	Road Oil Pump/Boiler House	Utility	04
648A	Road Oil Tank	Chemical Storage	04
648B	Road Oil Tank	Chemical Storage	04
673	Railcar Scale House	Maintenance	03

NCO Non-commissioned Officer

NOAA National Oceanic and Atmospheric Administration

2.0 BUILDINGS, STRUCTURES INVESTIGATION

2.1 Methods

2.1.1 Sampling Methods

Using the methodology presented in the Task 3 Work Plan (EBASCO, 1990), samples of soil, concrete (asphalt), or dielectric fluid were to be obtained from suspect equipment (both electrical and non-electrical), stained soil, or concrete within, atop, on, or immediately adjacent to the suspect buildings and structures. Twenty samples were taken from Group I buildings/structures.

In implementing this program, a presampling survey was conducted prior to the sampling operation to identify prospective sampling sites. Each building or structure was examined for possible polychlorinated biphenyls (PCBs) contamination in the form of suspect equipment, and stained soil, asphalt, and concrete in the vicinity of any suspect equipment. Transformers, single-phase motors, capacitors, pushbutton stations and fluorescent light fixtures were among the equipment inspected for the presence of a liquid reservoir. If this reservoir was located within the piece of equipment, and was accessible, the equipment would be tagged for sampling. Stained soil, asphalt, or concrete near any suspect equipment was similarly marked for sampling.

Samples were not collected at each building/structure included in the Group I PCB Inventory. During the Group I presampling survey, only one structure, Building 621B, Salvage Yard, bore evidence of potential PCB contamination. Conversation with the manager of the 621B Salvage Yard indicated a history of transformer storage in Bin 12, and on the southwest corner of the asphalt pad (Lambdin, 1990). Stained soil, asphalt and a can of suspect gear oil were also found in these areas. Twenty soil, asphalt, and liquid samples were obtained from the Salvage Yard, as follows:

Sample No.	Description (Building 621B)
1	Soil - Bin 12
3	Soil - Bin 12
4	Soil - Bin 12
5	Soil - Bin 12
6	Soil - Bin 12
7	Soil - Bin 12
8	Soil - Bin 12
9	Liquid - Gear Oil - Bin 12
10	Soil - Adjacent to Southwest (SW) Corner of Asphalt
10D	Soil - Duplicate - Adjacent to SW Corner of Asphalt
11	Soil - Adjacent to SW Corner of Asphalt
12	Soil - Adjacent to SW Corner of Asphalt
13	Soil - Adjacent to SW Corner of Asphalt
13R	Water - Rinse Blank - SW Corner of Salvage Yard
14	Asphalt - SW Corner of Salvage Yard
15	Asphalt - SW Corner of Salvage Yard
16	Asphalt - SW Corner of Salvage Yard
17	Asphalt - SW Corner of Salvage Yard
18	Asphalt - SW Corner of Salvage Yard

All soil sampling was completed to a depth of six inches with a stainless steel scoop that was decontaminated (washed with a low phosphate detergent or steam-cleaned) between samples. A core drill with a 1-1/2 inch carbide bit (dry) was used to obtain asphalt samples to a depth and diameter of 1 inch. The carbide bit was decontaminated between samples. Liquid samples from equipment and suspect cans of oil were collected using a dedicated glass thief.

All soil and asphalt sample locations were located by survey following completion of sampling.

2.1.2 Analytical Methods

All samples were analyzed by Environmental Protection Agency (EPA) Methods 600 (Polychlorinated Biphenyls in Transformer Fluid and Waste Oils), 608(40 CFR 136 - Organochlorine Pesticides and PCBs) and 8080 (SW846 - Organochlorine Pesticides and PCBs). United States Army Toxic Hazardous Materials Agency (USATHAMA) procedures were not used because there are no certified

methodologies available to analyze the type of matrices sampled (waste oils, concrete and asphalt). In addition, PCB mixtures are difficult to resolve. As a result, USATHAMA procedures were not employed for the PCB inventory. EPA Methods 600, 608, and 8080 have the ability to detect the following:

- PCB-1016
- PCB-1221
- PCB-1232
- PCB-1242
- PCB-1248
- PCB-1254
- PCB-1260

The method of analysis was dependent upon the sample matrix. Each matrix required slight modifications of EPA Methods 600, 608, and 8080, which determine PCBs by a gas chromatography/electron capture detector (GC/ECD) method. Modifications of some of the QC methods, through use of reference materials, were necessary because the sample matrices (concrete and asphalt) are very complex. Also, the National Institute of Standards and Technology does not provide a clean standard to use during analysis. The environmental matrices for the EPA Method 600 (The Determination of Polychlorinated Biphenyls in Transformer Fluid and Waste Oils), 608, and 8080 are listed below:

Matrix	Primary Method Designation (GC/ECD)
Nonimpervious Solids (concrete, asphalt)	8080
Soils	8080
Waste Oil (dielectric fluid)	600/608

Prior to the use of these methods, modifications including sample extraction techniques were necessary. Soxhlet or sonication extractions (high frequency probe that loosens any compounds adhering to

particles) were employed for all matrices; an aliquot of each sample was spiked with surrogates, extracted, and compared with the original analysis to determine the spike recovery values for that particular sample. Another modification is the collection of field duplicates and rinse blanks to validate the precision of the sampling/analytical process, and to ensure that the entire analytical system was interference free.

Ebasco Services Incorporated (EBASCO's) review of the PCB data performed by Vista Laboratories was found to be within acceptable criteria. Vista Laboratories followed appropriate quality control (QC) requirements such as daily calibrations, proper number of blanks, and matrix spikes (MS) and matrix spike duplicates (MSD). The MS (an actual sample where an aliquot is taken and a known amount of a particular set of target analytes, in this case, Aroclor 1254, is added) and a MSD (a duplicate of an MS) were compared and the recoveries were within two percent, as well as within the acceptable relative percent difference (RPD). Although no RPD limits have been established for the PCB compounds analyzed, the average RPD of 3.6 is acceptable. This acceptance is based upon the average RPD of pesticides, which is 45.

The percent recoveries of the samples analyzed were all within acceptable QC criteria. The duplicates were compared to the regular samples and found to be within determined ranges. EPA procedures and the appropriate QC requirements were performed on all samples for the PCB inventory. As noted above, the QC results were within acceptable criteria. The data for the PCB inventory appeared to meet all QC requirements and was acceptable. A summary of the results of these analyses is presented in Table 2-1, Section 2.3, of this report.

2.2 Field Observations

A wide array of equipment was found in Group I buildings. Several air conditioning units were found, along with some furnaces, boilers, generators, dishwashers, heaters, a gas/oil burner, and two battery chargers. Of more significance, different types of motors were observed in 20 of the Group I buildings. This included motors for sump pumps, water pumps, paper drills, lathes, fans, blowers, compressors, heaters, and furnaces. Ten transformers were located and examined in the Group I buildings, with the exception of the north end of Building 621B, Salvage Yard, where many stored transformers of different vintages were seen to be stacked upon each other. Bin 12, an empty, dirt-surface storage lot in the northeast corner of the Salvage Yard, was confirmed to have held stored transformers in the past. Four stained soil areas in the southeast corner of Bin 12 were observed, along with a can of leaking gear lube oil in the northeast corner of the bin. Stained soil was also observed immediately adjacent to the asphalt just outside the far southwest corner of the Salvage Yard. The staining in this soil appeared to be a result of liquid runoff from leaking equipment stored on the asphalt pad directly north of this small strip of soil. Stained asphalt was also seen on the above-mentioned southwest portion of the asphalt pad where transformers were previously stored.

Other pieces of equipment observed in Group I buildings/structures included fluorescent light fixtures and ballasts, circuit breaker boxes, capacitors, fluid power gas valve, remote-control switch, de-ion line starter, drill press, magnetic switch, pushbutton station, power systems, and panelboards.

In situ air monitoring for organic vapors was conducted during the presampling survey and all sampling events for safety purposes using a photoionization detector (HNU), an organic vapor analyzer (OVA), and a combustible gas indicator (CGI). Two OVA readings were recorded somewhat above background level in Buildings 211 and 328 but they were not considered to be significant. The HNU and MSA readings were not above background levels.

2.3 Analytical Results

Concentrations of PCBs ranged from below reporting limit (BRL) to 160 parts per million (ppm) in Group I buildings/structures. The site identification number, sample tag number, description of sample location, and PCB concentration are listed in Table 2-1. PCBs were found to be below the reporting limit in four of the 20 Group I samples. The remaining 16 soil and asphalt samples contained PCB concentrations ranging from 1.2 to 160 ppm. Two of these samples contained PCB concentrations greater than 50 ppm, an established standard for storage and disposal of PCBs promulgated by Title 40, Code of Federal Regulations, Part 761, Subpart 60 (40 CFR 761.60). A PCB concentration of 160 ppm was found in Sample (PCB)04621B11, a soil sample obtained from a thin strip of soil located immediately south of the southwest corner of the asphalt pad that comprises the west half of Building 621B, Salvage Yard (Figure 2-1). PCBs were detected at a concentration of 54 ppm in Sample (PCB)04621B18, an asphalt sample obtained from the southwest corner of the above-mentioned asphalt pad. The remaining four soil samples from the soil strip south of the southwest corner of the asphalt pad (vicinity of Sample (PCB)04621B11) contained concentrations of PCBs ranging from 6.8 to 26 ppm. The two remaining asphalt samples with PCB concentrations above the reporting limit from the southwest corner of the asphalt pad (vicinity of Sample (PCB)04621B18) contained PCB concentrations of 2.3 and 2.5 ppm. Eight soil samples were taken from Bin 12, a small storage partition in the northeast corner of Building 621B, Salvage Yard, and they ranged in concentration from 1.2 to 27 ppm of PCBs.

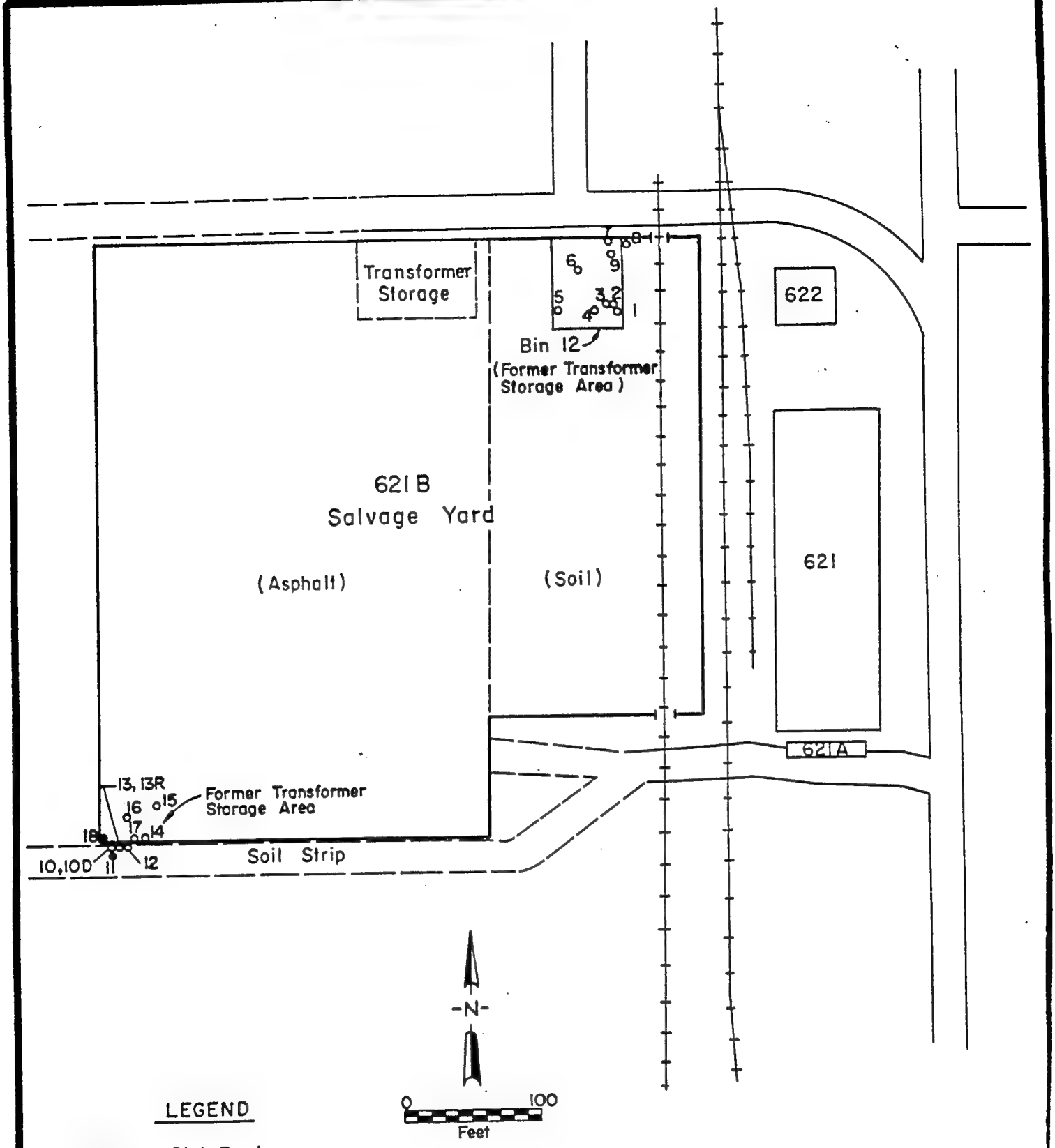
2.4 Contamination Assessment

Soil, liquid, and asphalt samples from Group I buildings and structures (Building 621B, Salvage Yard) contained PCB concentrations ranging from BRL to 160 ppm. Three distinct locations within 621B, Salvage Yard were sampled due to stained soil or asphalt, and their history of transformer storage. Bin 12, a 50 by 59 foot storage bin with a dirt surface, is located in the northeast corner of the salvage

TABLE 2-1
PCB SAMPLE RESULTS FOR SOIL, ASPHALT, AND LIQUID - GROUP I (BUILDING 621B, SALVAGE YARD)

	ID #	SAMPLE TAG #	DESCRIPTION	PCB CONCENTRATION (ppm)
	(PCB)04621B1	P0009	SOIL-Bin 12	8.2
	(PCB)04621B2	P0010	SOIL-Bin 12	4.7
	(PCB)04621B3	P0011	SOIL-Bin 12	8.0
	(PCB)04621B4	P0012	SOIL-Bin 12	27.0
	(PCB)04621B5	P0013	SOIL-Bin 12	5.6
	(PCB)04621B6	P0014	SOIL-Bin 12	2.2
	(PCB)04621B7	P0015	SOIL-Bin 12	1.2
	(PCB)04621B8	P0016	SOIL-Bin 12	1.3
	(PCB)04621B9	P0017	LIQUID-Gear Oil-Bin 12	BRL
	(PCB)04621B10	P0018	SOIL-South of SW Corner of Asphalt	13.0
	(PCB)04621B10-D	P0019	SOIL-South of SW Corner of Asphalt	26.0
*	(PCB)04621B11	P0020	SOIL-South of SW Corner of Asphalt	160.0
	(PCB)04621B12	P0021	SOIL-South of SW Corner of Asphalt	6.8
	(PCB)04621B13	P0022	SOIL-South of SW Corner of Asphalt	11.0
	(PCB)04621B13-R	P0023	WATER-Rinse-SW Corner-621B	BRL
	(PCB)04621B14	P0028	ASPHALT-SW Corner-621B	2.3
	(PCB)04621B15	P0029	ASPHALT-SW Corner-621B	BRL
	(PCB)04621B16	P0030	ASPHALT-SW Corner-621B	2.5
	(PCB)04621B17	P0031	ASPHALT-SW Corner-621B	BRL
*	(PCB)04621B18	P0032	ASPHALT-SW Corner-621B	54.0

* PCB concentration is greater than 50 ppm
ID Identification Number
BRL Below Reporting Limit
R Rinse Blank
D Duplicate
ppm parts per million



LEGEND

- Dirt Road
- Paved Road
- Railroad Tracks
- ●18 Sample Location- PCB Concentration > 50ppm
- o6 Sample Location- PCB Concentration < 50ppm

Prepared for:
Program Manager's Office
Rocky Mountain Arsenal
Aberdeen Proving Ground, Maryland

FIGURE 2-1

PCB Sample Locations
621 B, Salvage Yard
Rocky Mountain Arsenal
Prepared by: Ebasco Services Incorporated

yard. The soil in the southeast corner of this bin is moderately stained. Eight 0 to 6 inch soil samples and one liquid sample of gear oil from a leaking container were taken from this area. A thin strip of stained soil lying immediately south of the southwest corner of the asphalt pad (edge of an old dirt road) was the second location sampled. Five soil samples at depths of 0 to 6 inches were obtained from this location, plus a rinse blank sample of the sampling equipment decon water (water used for decontamination of equipment). The third location sampled is the southwest corner of the asphalt pad where five distinct stained areas on the asphalt surface are visible.

PCBs were found above 50 ppm in the 0 to 6 inch interval of one soil sample from the soil strip south of the asphalt pad, and the 0 to 1 inch interval of one asphalt sample from the southwest corner. Both samples were obtained from the above mentioned former transformer storage locations within the 621B Salvage Yard.

As evidenced from the staining, a thin strip of soil (at one time, the northern edge of an old dirt road) lying immediately south of the southwest corner of the asphalt pad is believed to have served as a drainage receptor for any dielectric fluid or liquids leaking from the transformers previously stored on this portion of the asphalt pad. A concentration of 160 ppm in the 0 to 6 inch interval of Soil Sample (PCB)04621B2, and concentrations ranging from 6.8 to 26 ppm in adjacent soil samples (0 to 6 inch interval) from the immediate area further confirmed the release of PCB-bearing dielectric fluid into this portion of soil south of the asphalt pad.

The 0 to 1 inch asphalt sample from the southwest corner of the asphalt pad with a PCB concentration of 54 ppm, along with two other asphalt samples from the immediate area with concentrations of 2.3 and 2.5 ppm, support the possible release of PCB-bearing dielectric fluid from previously stored transformers onto the asphalt at this location.

The relatively low PCB concentrations (1.2 to 27 ppm) detected in soil samples from Bin 12 that accompany the minor staining observed in this soil also confirmed the release of PCB-bearing dielectric fluid from previously stored transformers into the soil of Bin 12; however, concentrations in this area were found to be below the 50 ppm storage and disposal standard. There will be no labelling or marking of equipment in accordance with 40 CFR 761 because equipment containing PCBs in concentrations of 50 ppm to 500 ppm was not found in the Group I buildings.

3.0 CONCLUSIONS AND RECOMMENDATIONS

As discussed previously, the soil and asphalt in selected areas of 621B, Salvage Yard is contaminated with concentration of PCBs greater than 50 ppm as a result of transformer storage either in the sample location or immediately adjacent to it. According to 40 CFR 761.60, spills of dielectric or PCB-bearing fluid and other uncontrolled discharges of PCBs at concentrations of 50 ppm or greater constitute the need for disposal of PCBs. Any non liquid PCBs at concentrations of 50 ppm or greater in the form of soil, concrete, asphalt, or other debris should be disposed of:

1) In an incinerator which complies with 40 CFR 761.70; or
2) In a chemical waste landfill which complies with 40 CFR 761.75.

According to 40 CFR 761.60, capacitors that contain between 50 and 500 ppm PCBs shall be disposed of in an incinerator that complies with 761.70 or in a chemical waste landfill that complies with 761.75. Any PCB article stored for disposal before January 1, 1983, shall be removed from storage and disposed of as required by this part before January 1, 1984. Any PCB Article stored for disposal after January 1, 1983, shall be removed from storage and disposed of as required by Subpart D of this part within one year from the date when it was first placed into storage.

All equipment in Group I buildings/structures with a potential for containing PCB-bearing liquid was examined. Dates of manufacture, the manufacturer, type of motor, model and serial number were recorded. Manufacturers were then contacted when possible.

In most cases, the type of motor could be determined by examining the motor labelling or contacting the manufacturer. Split-phase and three-phase motors do not contain capacitors, and if they are not liquid cooled, it can be assumed they do not contain any PCB-bearing dielectric fluid. However,

single-phase motors may contain capacitors, and if manufactured prior to 1979, they could contain PCB-bearing dielectric fluid.

Of the 55 motors observed in Group I buildings/structures, approximately half were determined to be single-phase, with the balance being three-phase or split-phase as shown in Table 3-1. As stated previously, the single phase motors may contain capacitors. In most situations, the year of manufacture could not be determined because:

- the face plate was illegible due to rust or corrosion,
- the motor was so old that the manufacturer does not have record of such a motor,
- the manufacturer no longer exists.

EBASCO was advised by most manufacturers that any attempt to open the capacitor and sample the liquid would destroy the motor case and therefore, the motor. Table 3-1 is a list of the Group I buildings/structures that contain single-phase motors.

It could not be determined conclusively whether the electric motors contained capacitors or whether the capacitors are of the wet or dry type. This was because damage to the motor would occur upon accessing the capacitor in order to sample and analyze the dielectric fluid for PCBs. As a result, recommendations are as follows:

- Electric motors which are inoperable and/or unrepairable and scheduled for disposal as scrap metal should be disassembled and inspected for a capacitor. If dry-type capacitors are found, they will not contain PCBs and may be disposed of with no restrictions. If wet-type capacitors are found, they should be placed in secure storage until a

TABLE 3-1

GROUP I BUILDINGS/STRUCTURES CONTAINING SINGLE-PHASE MOTORS

Building No.	Single Phase Motor	Manufacturer
111	Electric Motor	Century
	Pump Motor	General Electric
	Compressor Motor	Peerless Electric Co.
	Fan Motor	Trane Co.
611	Pump Motor	Emerson Motor Division
	Electric Motor	General Electric
	Pump Motor	General Electric
	Motor	Westinghouse
612	Motor	Marathon Electric
	Heater w/Fan Motor	Trane Co.
613	Motor-Capacitor Start	Dayton Electric Manuf. Co.
	Electric Motor	Emerson Motor Division
618	Pump Motor	Marathon Electric
619	Pump Motor	General Electric
	Pump Motor	Marathon Electric
	Pump Motor	Marathon Electric
623	AC Motor (Dual Volt. Capacitor)	General Electric
624	Motor-Grinder	Brown-Brockmeyer Co.
627	Compressor Motor	Dayton Electric Manuf. Co.
	Pump Motor	Dayton Electric Manuf. Co.
	AC Motor (Split Phase)	Dayton Electric Manuf. Co.
	Drill Press-Motor	Rockwell Delta
	Lathe-Motor	General Electric
	Motor	General Electric
	Motor	Reliance Electric Corp.
629	Magnetic Switch-Motor	General Electric
631	Pump Motor	General Electric
633B	Sump Pump Motor	The Hoover Co.

sufficient quantity are accumulated for disposal, or until the one year storage time limit is reached, and disposed in accordance with 40 CFR 761.60.

- Electric motors which are operable or repairable and are scheduled for resale and reuse should be disassembled and inspected as described above, or sold with a disclaimer concerning their PCB suspect status.

A similar approach is recommended for fluorescent light ballasts. Several buildings were noted as containing fluorescent lighting systems. There was no evidence of leaking ballasts, and no lighting fixtures were disassembled to determine if they contained wet-type ballasts. A drum containing used ballasts was found in Building 751. EBASCO was advised that most ballasts are potted in an asphalt compound; the ballast would thus have to be destroyed in order to sample the liquid inside. It is recommended that the practice of removing lighting ballasts from buildings scheduled for demolition be continued to prevent unintentional, improper disposal of possible PCB articles.

A total of 9 transformers were observed inside Group I buildings and structures, and an additional transformer was found on the outside east wall of Building 648. All transformers were accessible which permitted confirmation that they are all dry transformers (no reservoir containing PCB-bearing dielectric fluid).

According to 40 CFR 761.30, as of October 1, 1985, the installation of PCB transformers (wet transformers which have been placed into storage for reuse or which have been removed from another location) in or near commercial buildings is prohibited. This further substantiates the finding of exclusively dry type transformers in Group I buildings and structures.

REFERENCES

EBASCO (Ebasco Services, Incorporated). 1988, October. Final Structures Survey Report, Volumes I-III. Contract No. DAAK11-84-D-0017, Task No. 24. Prepared for Program Manager's Office for Rocky Mountain Arsenal Contamination Cleanup.

EBASCO (Ebasco Services, Incorporated). 1990, March. Final Work Plan - Polychlorinated Biphenyl (PCB) Inventory. Volume I, Task No. 3. Contract No. DAAA05-89-C-0002. Prepared for Program Manager's Office for Rocky Mountain Arsenal Contamination Cleanup.

Lambdin, L. 1990, April 23. Personal communication. Ebasco Services Incorporated.

APPENDIX A

Equipment Observed in Group I Buildings/Structures

APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	Allis-Chalmers						
DN	631	Motors (2)	N54610-8-	511D-N54610-80 511D-N54610-185		ARX	3-Phase
DN	648	Transformer (dry)		1822849		AD	Single Phase
	Automatic Switch Co.						
DN	613	Remote Control Switch		433085	926P		
	Baldor Electric Co. Ft. Smith, AR.						
WN	624	Motor (no PCB)	20B2M				
	Baldor Industrial Motor						
WN	632	Motor (no PCB)				VM3211T	3-Phase
	Benjamin Electric Mfg. Co.						
DN	167	Fluorescent Light Fixtures					
	Berg-Gibson Mfg. Co., Kansas City, MO						
I-1	618	Truck Batt. Charger	PR 1240	L6-3368		capacitor: 40-1-2	Part #: 20-2-2
	Bogue Precision Electrical Equipment						
DN	627	Battery Charger		8200-125			2 Dry Transf.Inside

WP Wet - PCB Positive

DN Dry - PCB Negative

I-1 Indeterminate - Equipment Interior Inaccessible - Potential PCBs

I-2 Indeterminate - Manufacturer Has No Record Of Equipment

I-3 Indeterminate - Manufacturer No Longer Exists

APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	Brown-Brockmeyer Co., Inc., Dayton, OH						
I-1	624	Grinder	G184-3 7583TR (Part #)		4F09(603)-31506(order #)		Single Phase
	Carrier Air Conditioner Co., Syracuse, NY						
DN	611	Air Conditioner	50BB016520	5409047			3-Phase
	Carrier Air Conditioner Co., Syracuse, NY						
DN	111	Air Conditioner	48DF-044	Y982385			Series: 540PA
DN	111	Air Conditioner	48DF-044	X981854			Series: 540PA
	Century						
I-1	131	Sump Pump Motor	Part #: 7-124937-20			SPS	Frame #: G48K
I-1	111	Electric Motor	SP-G2L-FHEG-3F	ANG			Single Phase
	Challenge Machinery Co., Grand Haven, MI.						
DN	111	Paper Drill-Motor	Century I	39383			RMA #: S2920 Split Phase
	Chicago Transformer Division. Essex Wire Corp.						
DN	159	Transformer (dry)	NCF-2450				
	Dayton Electric Manuf. Co.						
I-2	627	Compressor Motor	9K453C				Single Phase
I-2	627	Pump Motor	5K1177				Single Phase

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APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
Dayton Electric Manuf. Co.(continued)							
DN	627	Split Phase AC Motor	5K416C				Single Phase (no PCB)
DN	632	Motor-Sump Pump	3N345B				3-Phase
I-2	613	Motor	6K122E				Capacitor Start Motor
	Day-Brite Lighting, Inc.						
I-1	163	Fluorescent Light Fixtures					
	Economics Laboratory Inc.						
I-1	383	Dishwasher/capacitors	B26	LR12375	PR1-115/230 V		SEC-22V, 30VA
	Emerson Motor Div., St. Louis, MO.						
I-1	611	Pump Motor	CA55CXDCF-1962				Single Phase
I-2	627	Heater Motor	B		UB23		
I-2	612	Motor			77869-1		
I-1	613	Electric Motor	CA55CXDCF-1962				Single Phase
	Frank Adam Electric Co.						
DN	166	Panelboard					
	General Electric						
I-2	134	Sump Pump Motor	N.P. 251354				
I-1	618	Fluorescent Lights			502X46		

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APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
General Electric (continued)							
I-1	623	A.C. Motor	5KC67881270			KC	Single Phase Dual Volt.Capacitor
I-2	648	Motor-Pump Unit	99E16GL				
I-1	627	Motor-Lathe	5XBF00BD				Single Phase
I-2	627	Motor	5KG324D3				
I-1	627	Motor	5KH35KG113	SPA			Single Phase
DN	627	Motor	5K224D530				3-Phase
I-1	629	Magnetic Switch			4389098G104		Single Phase
DN	629	Induction Motor	5K254B105				3-Phase
I-1	611	Electric Motor	5KC47NG865A7				Single Phase
I-1	611	Pump Motor	5KH39NG 423				Single Phase
DN	112	Transformer (dry)	9T51B108				Single Phase
I-1	619	Fluor.Light Ballast			8G1141		Class: P
I-1	111	Pump Motor	5KC38FNG1T				Single Phase
I-1	631	Pump Motor	5KC45PG1FX				Single Phase
I-1	619	Pump Motor	5KC45RG1183				Single Phase
	Hevi-Duty Elec.(Sola Basic Ind)						
DN	632	Gas/Oil Burner	DLG 145-S	M8187			
	Honeywell						
DN	368	Fluid Power Gas Valve				V4055A10643	

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APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	The Hoover Co., N. Canton, OH						
I-1	633B	Sump Pump Motor	5989JH01367				Single Phase
	International Sales Co., San Francisco, CA						
I-1	618	Furnace w/elec.mtr.	120-F9A	151			
I-1	618	Furnace	210F9A	351			
I-2	647A	Atlas-AC Unit (air cond)	85F9A	952			
	ITT General Controls						
I-2	632	Motor	H01A232A01	7815A			
	Kingston-Conley, Inc.						
I-1	111	Blower Motor	38P153013	UD3-3654			
	Lennox Industries, Inc.						
DN	111	Furnace/AC Unit	GCS9-651-120A-3P				
DN	111	Furnace/AC Unit	GCS9-411-120-1P	5480D 03833			
	Liebert Corp.						
DN	112A	Uninterrupt. Power System	AP-340	P12647SD		Site ID: 35650	Tag #: 1050800
DN	112A	Uninterrupt. Power System	AP-340	P-09932SD		Site ID: 35650	Tag #: 1050801

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APPENDIX A: EQUIPMENT OBSERVED IN GROUP I BUILDINGS/STRUCTURES

EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	Lincoln Motor Electric Co., Cleveland, OH						
DN	627	Motor	383596		DG		3-Phase
	Louis Allis Co., Milwaukee, WI						
DN	629	Pump Motor-Diesel	605828			ES	3-Phase
DN	629	Pump Motor-Regular	605829			ES	3-Phase
	Marathon Electric						
I-1	612	Motor	VQD56C341006CBP				Part #: DM0005 Single Phase
DN	632	Main Motor	HA254TTDR76	21BAWF1			3-Phase
I-2	112	Water Pump Motor	PQD56C17D957B W				
I-1	618	Pump Motor	5UJ184CDR343EEWCW				Single Phase
I-1	619	Pump Motor	5UJ184CDR343EEWCW				Single Phase
I-1	619	Pump Motor	5UJ184CDR343EEWCW				Single Phase
	Minneapolis Honeywell Reg. Co., Minneapolis, MN.						
DN	111	Transformer (dry)				AT72A3CG2	
	Peerless Electric Co., Warren, OH						
I-2	368	Motor		359923			
DN	111	Gas Boiler	211-9-W-S-I	211-9143-0884			
DN	111	Compressor Motor		FB27897			Single Phase

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EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	Reliance Electric Corp						
I-1	627	Motor	707613-PB (ID #)				Single Phase
	Rockwell Delta						
I-1	627	Drill Press	83-510				Single Phase
	Square D						
DN	166	Breaker Box					
	Tecumseh Products Co.						
I-1	383	Capac.(mtr/cpsr conn.)	3628322	8576110C09			270-324MFD
	Trane, LaCrosse, WI.						
DN	111	Self-Contained Air Cond.	SC51C	671-61C-04-16879			
I-1	111	Fan Motor	SCX51C (1960s)				Single Phase-Capacitor
I-1	612	Heater w/Fan Motor.	UHSA06058AAAC	083K03236 (1970s)		136-105-01	Single Phase
DN	613	Motor	RAS-73B	9F-74426			3-Phase
	Wadsworth Electric Mfg. Co.						
DN	159	Panelboards (2)			NRP3166		
	Wagner Electric						
I-3	135	Generator	GP-80	NGG48270			

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EQUIPMENT STATUS	MANUFACTURER BUILDING #	EQUIPMENT	MODEL #	SERIAL #	CATALOGUE #	TYPE #	OTHER
	Webster Electric						
I-2	632	Ignition Transformer				6128AO38V	
	Westinghouse						
DN	627	Transformers (3) (dry)		56K1062		AJRB	Style: 1484207B
				56K1069		AJRB	
				56615815		AJRB	
DN	624	Transformer (dry)	1199469 (Style)	3250851		TW	
DN	624	Transformer (dry)				W-1	
DN	624	De-Ion Line Starters (2)	1089747B				
DN	629	Push Button Station	107296OD			HD-E	Class #: 15-010
I-1	611	Motor		309P444-A			Single Phase

WP Wet - PCB Positive

DN Dry - PCB Negative

I-1 Indeterminate - Equipment Interior Inaccessible - Potential PCBs

I-2 Indeterminate - Manufacturer Has No Record Of Equipment

I-3 Indeterminate - Manufacturer No Longer Exists